

IN THE CLAIMS

Cancel claims 1-17 without prejudice.

Claims 1-17 (Canceled)

18.(Currently Amended) A method of sensing temperature through intensity modulation of a light signal using an intensity modulating ~~modulated~~ and remote sensing optic fiber temperature switching immersion probe, said method comprising the steps of:

- (a) immersing the probe in a liquid container having a temperature below a ~~the~~ melting point of a ~~the~~ chemical;
- (b) recording a ~~fixed~~ value of an optical signal generated by transmission of the light signal through the chemical in a solid state and at ~~the~~ room temperature; ~~and~~
- (c) detecting a ~~the~~ maximum optical signal generated by transmission of the light signal through the chemical at its melting point and in a liquid phase;
- (d) ~~using detecting the optical signal by means of a photo-detector to detect the optical signal from the probe;~~
- (e) signal processing an output of the photo-detector by a signal processing circuit ~~means of an electronic circuitry~~; and
- (f) enabling actuation of a relay dependent on the signal from the probe to at least one of stop a ~~the~~ heating process and ~~or~~ raise an alarm.

19.(Original) The method according to claim 18, wherein the liquid is selected from the group consisting of water, acetone, carbon tetrachloride and transformer oil.

20. (Currently Amended) The method according to claim 18, wherein the chemical is selected from ~~selected from~~ the group consisting of: oxalic acid, sodium chloride, paraffin wax and ~~preferably~~ acetamide.

21. (Currently Amended) The method according to claim 18, wherein the chemical has ~~having~~ a melting point in a ~~the~~ range of 75-85 °C.

22. (Currently Amended) The method according to claim 18, wherein ~~the~~ optical signal propagation in the probe is secure and without any cross talk or interference problems.

23. (Currently Amended) The method according to claim 18, wherein the optical signal in the probe is unaffected by ~~the~~ presence of electrical signals.

24. (Currently Amended) The method according to claim 18, further comprising the step of:

using wherein the said probe is used for remote sensing ~~upto~~ up to a distance of 1 km.

25. (Currently Amended) The method according to claim 18, wherein the ~~said~~ probe at an increased temperature provides an increase of six 6 times in an ~~the~~ output signal over ~~the~~ signal at ~~the~~ room temperature.

26. (Currently Amended) The method according to claim 18, wherein the chemical ~~substance that~~ is opaque at room temperature and becomes transparent at a predetermined ~~given~~ higher temperature enabling actuation of a relay to at least one of stop a ~~the~~ heating process and ~~or~~ raise an alarm.